THURSDAY, OCTOBER 26, 1871

SCIENCE IN AMERICA

Proceedings of the Essex Institute. Vols. I.-V. *Proceedings and Communications of the Essex Institute.* Vol. VI. *Bulletin of the Essex Institute.* Vols. I. and II. (Salem, Massachusetts. Published by the Essex Institute, 1856-1871.)

WE have, on various occasions, alluded to the large amount of encouragement to the pursuit of science afforded by the governing powers of the United States, both by the Central Federal Government at Washington, and by those of the individual States. The sums of money voted for such purposes by our American relations would make the hair of our economical Government officials in this country stand on end, and would be certain to provoke angry comment in our House of Commons; while the number of scientific men paid for carrying on investigations and preparing reports on various subjects of great practical value for the welfare of the country, would almost bear comparison with the number we pay for doing nothing or for obstructing all rational improvements.

When men of culture and science in this country attempt to advocate the claims of Science to national support from the Government, one of the arguments most relied on by their opponents is that such a course would have the effect of checking all scientific enterprise and research that was not paid for by the State. We should like these objectors to look over the publications now lying before us; and we think, if they were able to derive any lesson from it, it might have a tendency to modify their opinion.

New England is acknowledged to be the most highly educated portion of the United States, and among the New England States none occupies a more honourable position than Massachusetts for its high standard of cultivation, and for the public-spirited manner in which its citizens tax themselves for the support of education and the spread of knowledge, scientific and otherwise. The early New England settlers had a loving habit of perpetuating in their new settlements the names of familiar places in the old country, and thus we find one of its counties called Essex, with an area about equal to that of our Middlesex, possessing a scientific institute located in the thriving town of Salem. A sketch of the history of the Essex Institute since its foundation may convey some idea of the manner in which voluntary scientific effort is carried on in Massachusetts.

The Essex Institute was formed in 1847 by the union of the Essex Historical and the Essex County Natural History Societies; and the Institute, thus organised, consisted of three departments—the historical, having for its object the collection and preservation of whatever relates to the topography, antiquities, and civil and ecclesiastical history of Essex County; the natural history, for the formation of a cabinet of natural productions in general, and more particularly of those in the county, and for a library of standard works on the natural sciences; and the horticultural, for promoting a taste for the cultivation of choice fruits and flowers, and for collecting works on horticulture and agriculture in connection with the general library.

From 1848 to 1866 the Essex Institute published five volumes of "Proceedings," containing reports of papers read before the Institute on the various subjects included in the programme. Among the more important papers contained in these volumes may be mentioned the following:—List of Infusoria found chiefly in the neighbourhood of Salem, by Thomas Cole (1853); Catalogue of the Birds of Essex County, by F. W. Putnam, 235 species (1856); Account of the life, character, &c., of the Rev. Samuel Parris, of Salem Village, and of his connection with the Witchcraft delusion of 1692, by Samuel P. Fowler (1856), reminding one exceedingly of a history that will probably one day be written of certain similar delusions not unknown in our own day; On Indian Relics from Marbleshead (1857); Noticeable traits of the Flora of Nahant, by C. M. Tracy (1858); On the changes produced by Civilisation in the habits of our common Birds, by S. D. Fowler (1860); Catalogue of the Birds found at Norway, Oxford County, Maine, by A. P. Verrill (1862); Report of the Army Worm (*Leucania unipuncta*, Ham.), by Carleton A. Shurtleff (1862); Catalogue of Birds found at Springfield, Mass., with Notes on their migrations, habits, &c., by J. A. Allen (1864); The Humble Bees of New England and their Parasites, by A. S. Packard, jun. (1864); A classification of Mollusca, based on the principle of Cephalisation, by Edward S. Morse (1865); Synopsis of the Polyps and Corals of the North Pacific Exploring Expedition under Commodore C. Ringgold and Captain John Rodgers, U.S.N., from 1853 to 1856, by A. P. Verrill (1805-06); Flora of the Hawaian Islands, by Horace Mann (1866).

From 1867 the Transactions of the Institute have been published in a slightly different form, under the title of "Proceedings and Communications of the Essex Institute," its contents consisting to a considerable extent of continuations of some of the elaborate and important papers commenced in the earlier volumes, especially of Prof. Verrill's "Synopsis of the Corals and Polyps of the North Pacific Exploring Expedition," and of the "Flora Hawaii," by Mr. Horace Mann, whose early death was an irreparable loss to American botanists. There are also a number of papers by Mr. A. S. Packard, whose services to embryology are so well known, and the very valuable contribution by Dr. Elliott Coues, "Catalogue of Birds of North America contained in the Museum of the Essex Institute; with which is incorporated a list of the Birds of New England, with brief critical and field notes." The following quotation from this paper will interest ornithological readers:—"Within the area of New England are represented portions of two faunæ, the Canadian and Alleghanian, which differ in many respects from each other. There seems to be a natural dividing line between the birds of Massachusetts and Southern New England generally, and those of the more northern portions of the Eastern States. Numerous species which enter New England in spring, to breed there, do not proceed, as a general rule, farther north than Massachusetts, and many others, properly to be regarded as stragglers from the south in summer and early autumn, are rarely, if ever, found beyond the latitude of this State. In like manner, many of the regular winter visitants of Maine are of rare

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and only occasional occurrence, and are not found at all much farther south. Again, many species hardly known in Massachusetts and southward, except as migratory species passing through in spring and autumn, are in Maine regular summer visitants, breeding abundantly. Other minor differences, resulting from latitude and physical geography, will readily be brought to mind by attentive consideration of the subject, and therefore need not be here detailed. It will be evident that a due regard for these important points has necessitated, in the case of almost every species in the list, remarks elucidative of the special part it plays in the composition of the avifauna."

The later numbers, especially of the Proceedings, are illustrated by admirably executed lithographs illustrative of the natural history pages, and a considerable amount of space is occupied by reports of the Field meetings of the members. It is interesting to read that the idea of these excursions, which have been productive of such valuable practical result, originated from a perusal of the Transactions of the Berwickshire Naturalists' Club.

While thus affording a medium for the publication of papers of sterling scientific value, the Essex Institute has not been unmindful of the no less imperative duty of scientific bodies, that of promoting a taste for science among the educated but unscientific public. We in this country have perhaps erred in too much ignoring the *profanum vulgus*. It becomes, however, yearly more and more manifest that science must be no esoteric religion, but that it must grasp, in its all-including embrace every section of the community. It is doubtful, indeed, which class of scientific men deserves best of the republic, those who devote the whole of their time to actual work in the laboratory or the dissecting-room; or those who of the riches of their knowledge impart to the ignorant crowd in the lecture-room or by the popular treatise. With the names of the former will doubtless be connected the most important discoveries of the age; the latter will have the satisfaction of knowing that they have done their part towards making science really popular, towards spreading its blessings among the masses. The danger is when the instruction of the public is undertaken by those who have not practically made themselves masters of the mysteries which they presume to communicate to others.

Commencing with January 1869, the issue was commenced, in addition to the publications named above, of the "Bulletin of the Essex Institute," the object being to give to the public such portions of communications made to the Institute as are of popular interest. We find here, in language intelligible to non-scientific readers, reports of such proceedings and papers read at meetings of the Institute, in Natural History, Philology, and History, as are likely to interest the inhabitants of the county generally; and we look upon this as not the least valuable of its publications.

An interesting publication in connection with the Essex Institute is "The Naturalists' Directory," which is intended, when complete, to form a list of the addresses of the workers in each department of science all over the world. If ever the proposed union of our scientific societies is effected, we may get something of the kind in this country.

The above account of the Proceedings of the Essex Institute since its foundation may serve to show the zeal displayed by workers in Natural History in the United States, and may also be useful in pointing out some hitherto unrecognised fields of usefulness to similar bodies at home.

OUR BOOK SHELF

Contributions to the Flora of Mentone, and to a Winter Flora of the Riviera, including the Coast from Marseilles to Genoa. By J. Traherne Moggridge, F.L.S. 100 coloured plates. (London: L. Reeve and Co., 1871.)

MR. MOGGRIDGE has collected in this splendid volume drawings and descriptions of one hundred of the most striking plants of the Mediterranean coast of France. We have no preface to inform us on what principles the selection has been made, nor are they self-evident. But few of the species are new, though some of them are doubtful plants of which precise characters were much wanted. Mr. Moggridge is well known to English botanists as an accurate and careful observer, who has paid great attention to the botany of this district; and he has here produced a volume which is not only a useful contribution to science, but is surpassed by few that we know as a *livre de luxe* to lie on the drawing-room table. The illustrations are beautifully drawn by the author himself, and are exquisitely coloured. Mr. Moggridge has made himself thoroughly acquainted with the beautiful but difficult species or varieties of Orchis of the south of France related to our Bee-orchis. It is remarkable that, while on our chalk-hills the bee and fly orchis, *Ophrys apifera* and *muscifera*, remain perfectly distinct, in the south of Europe they approximate to one another by innumerable intermediate forms, which may all be considered as varieties of Linnæus's *O. insectifera.* These are here worked out with great care, and we have plates of a number of the most interesting forms. A. W. B.

Zeitschrift der österreichischen Gesellschaft für Meteorologie. Redigirt von Dr. C. Jelinek und Dr. J. Hann, v. Band, mit 3 lithographirten Tafeln, pp. 644; vi. Band, pp. 1—224 (Wien, 1870-71.)

THE fifth volume of the Journal of the Austrian Meteorological Society, published fortnightly, and extending in one year to 644 octavo pages, shows at once the extraordinary energy with which this society conducts its operations, and the high estimation in which meteorology is held in Austria. What strikes one as the most remarkable feature of this periodical is the broad and catholic spirit in which the science is treated. Whilst the articles are mostly written by members of the society, the pages of the journal are open to meteorologists in all parts of the globe. Reprints or abstracts, accompanied where necessary with tabular matter, of the more important meteorological papers which have been published in other journals, appear from time to time. A few of the more important of these are the following, viz:—Dove's "Non-periodic Changes of the Distribution of Temperature over the Earth's Surface," D. Milne Home's "Increasing the Supply of Spring Water at Malta, and Improving the Climate of the Island," Glaisher's "Temperature of the Air at Different Heights," Buchan's "Mean Pressure and Prevailing Winds over the Globe," Wojeikof's "Mean Temperature of Russia," Raulin's "Rainfall of Algiers," Rayet's "Climates of the Isthmus of Suez," Jelinek's "Distribution of Thunderstorms in Austria," Petermann's "Monogram on the Gulf-Stream," Mohn's "Temperature of the Sea," and Angus Smith's "Composition of the Atmosphere." The abstracts are not bald productions, but ably written and readable articles. Another admirable feature is the papers on the climates of places in different parts of the globe, by Dr. Hann, one of the editors and unquestionably one of the greatest

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